

Application No. 10/074,179  
Docket No. 10006288-1

**Amendments to the Claims:**

This listing of claims will replace all prior versions in the application:

**Listing of Claims:**

1. (Canceled)
2. (Canceled)
3. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:
  - checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and
  - providing a corresponding photo quality feedback to a camera user, wherein the checking step comprises:
    - computing a photo sharpness figure of merit for the captured image; and
    - comparing said computed photo sharpness figure of merit to a threshold to determine if said photo sharpness figure of merit exceeds said threshold, the computing step further comprising:
      - generating a line pixel profile of the captured image;
      - computing an absolute difference in a channel gray level between adjacent pixels in the horizontal direction using said line pixel profile; and
      - picking the maximum absolute difference as the photo sharpness figure of merit.

Application No. 10/074,179  
Docket No. 10006288-1

4. (Original) The method of claim 3 further comprising:  
transforming the captured image from RGB color space into YCrCb color space.
5. (Original) The method of claim 3 further comprising:  
transforming the captured image from RGB color space into L\*a\*b color space
6. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:  
checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and  
providing a corresponding photo quality feedback to a camera user, wherein the checking step comprises:  
computing a photo sharpness figure of merit for the captured image; and  
comparing said computed photo sharpness figure of merit to a threshold to determine if said photo sharpness figure of merit exceeds said threshold, the computing step further comprising:  
generating a line pixel profile of the captured image;  
computing the absolute difference in a channel gray level between adjacent pixels in the horizontal direction using said line pixel profile, said computed absolute difference constituting a plurality of data points;  
ranking said data points in value;  
dropping at least a top 1% of said ranked data points from consideration; and

Application No. 10/074,179  
Docket No. 10006288-1

picking a next top-valued data point as the photo sharpness figure of merit.

7. (Original) The method of claim 6 further comprising:  
transforming the captured image from RGB color space into YCrCb color space.
8. (Original) The method of claim 6 further comprising:  
transforming the captured image from RGB color space into L\*a\*b color space.
9. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:  
checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and  
providing a corresponding photo quality feedback to a camera user, wherein the checking step comprises:  
computing a photo sharpness figure of merit for the captured image; and  
comparing said computed photo sharpness figure of merit to a threshold to determine if said photo sharpness figure of merit exceeds said threshold, the computing step further comprising:  
computing a magnitude of a two-dimensional gradient of a channel;  
and  
picking a maximum two-dimensional gradient magnitude as the photo sharpness figure of merit.

Application No. 10/074,179  
Docket No. 10006288-1

10. (Original) The method of claim 9 further comprising:  
transforming the captured image from RGB color space into YCrCb color space.
11. (Original) The method of claim 9 further comprising:  
transforming the captured image from RGB color space into L\*a\*b color space.
12. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:  
checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and  
providing a corresponding photo quality feedback to a camera user, wherein the checking step comprises:  
computing a photo sharpness figure of merit for the captured image; and  
comparing said computed photo sharpness figure of merit to a threshold to determine if said photo sharpness figure of merit exceeds said threshold, the computing step further comprising:  
computing a magnitude of a two-dimensional gradient of a channel, said computed two-dimensional gradient magnitude constituting a plurality of data points;  
ranking said data points in value;  
dropping at least a top 1% of said ranked data points from consideration; and

Application No. 10/074,179  
Docket No. 10006288-1

picking a next top-valued data point as the photo sharpness figure of merit.

13. (Original) The method of claim 12 further comprising:  
transforming the captured image from RGB color space into YCrCb color space

14. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:

    checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and

    providing a corresponding photo quality feedback to a camera user wherein said checking step further comprises:

        computing a face quality figure of merit for the captured image; and  
        comparing said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold.

15. (Original) The method of claim 14 wherein the computing step comprises:  
detecting facial image data from the captured image; and  
converting said detected facial image data from RGB color space into L\*a\*b color space.

Application No. 10/074,179  
Docket No. 10006288-1

16. (Currently Amended) The method of claim 15 further comprising:  
computing the mean of L\* to obtain a brightness figure of merit; [.]  
determining if said brightness figure of merit falls within a brightness threshold range.
17. (Original) The method of claim 15 further comprising:  
computing the local standard deviation of L\* to obtain a noise figure of merit; and  
determining if said noise figure of merit exceeds a noise threshold.
18. (Original) The method of claim 15 further comprising:  
computing the overall standard deviation of L\* to obtain a contrast figure of merit;  
and  
determining if said contrast figure of merit falls within a contrast threshold range.
19. (Original) The method of claim 14 wherein the computing step comprises:  
detecting facial image data from the captured image; and  
converting said detected facial image data into a binary mask of only white and black  
pixels, wherein said white pixels represent pixels of red color and said black pixels represent  
pixels of colors other than red; and  
checking said binary mask for presence of white pixels.
- 20 (Canceled)

Application No. 10/074,179  
Docket No. 10006288-1

21. (Previously Presented) A method for assessing the photo quality of a captured image in a digital camera, said method comprising:

    checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable; and

    providing a corresponding photo quality feedback to a camera user, said checking step further comprising:

        computing a flare figure of merit for the captured image;

        comparing said computed flare figure of merit to a threshold to determine if said flare figure of merit exceeds said threshold; and

        providing a corresponding flare feedback to said camera user wherein the computing step comprises:

            generating a binary mapping of the captured image containing only black and white pixels, said white pixels representing saturated pixels of the captured image; and

            subdividing said binary mapping into a plurality of regions.

22. (Original) The method of claim 21 further comprising:

    computing a percentage of white pixels in each region to obtain a flare figure of merit; and

    determining if said flare figure of merit in at least one region exceeds a flare threshold.

23. (Original) The method of claim 22 wherein said flare threshold is at least 50%.

Application No. 10/074,179  
Docket No. 10006288-1

24. (Currently Amended) A method for assessing the photo quality of a captured image in a digital camera, said method comprising the steps of:  
computing, in-camera, a photo sharpness figure of merit for the captured image;  
comparing, in-camera, said computed photo sharpness figure of merit to a threshold to determine if said photo sharpness figure of merit exceeds said threshold;  
providing a corresponding photo sharpness feedback to a camera user['];  
computing, in-camera, a face quality figure of merit for the captured image;  
comparing, in-camera, said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold;  
providing a corresponding face quality feedback to said camera user;  
computing, in-camera, a flare figure of merit for the captured image;  
comparing, in-camera, said computed flare figure of merit to a threshold to determine if said flare figure of merit exceeds said threshold; and  
providing a corresponding flare feedback to said camera user.

25. (Canceled)

26. (Previously Presented) A system for assessing the photo quality of a captured image in a digital camera, said system comprising:  
an image capture unit;  
an image processor operatively coupled to said image capture unit for processing the captured image;  
a photo quality check unit operatively coupled to said image processor for checking,

Application No. 10/074,179  
Docket No. 10006288-1

in-camera, the photo quality of the processed image; and  
a display operatively coupled to said photo quality check unit for providing a  
corresponding photo quality feedback to a camera user, wherein said photo quality check unit  
comprises:  
a photo sharpness check module operatively coupled between said image  
processor and said display for checking in-camera the photo sharpness of the  
processed image;  
a face quality check module operatively couple between said image processor  
and said display for checking in-camera the face quality of the processed image; and  
a flare check module operatively coupled between said image processor and  
said display for checking in-camera the processed image for presence of flare.

27. (New) The method of claim 14, wherein the computing of the face quality  
figure of merit comprises

computing:

a brightness figure of merit;  
a noise level figure of merit; and a contrast figure of merit  
and  
checking for a presence or an absence of red eye.